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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sydon, et al.
Serial No.: 09/444,028
Filing Date: November 19, 1999
Group Art Unit: 2731
Examiner: J. Corrielus
Title: METHOD AND SYSTEM FOR POWER-CONSERVING INTERFERENCE AVOIDANCE IN COMMUNICATION BETWEEN A MOBILE UNIT AND A BASE UNIT IN A WIRELESS TELECOMMUNICATION SYSTEM

Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

PRELIMINARY AMENDMENT

Prior to the initial review of this continued prosecution application of U.S. Application Serial No. 09/444,028, filed November 19, 1999, entitled "METHOD AND SYSTEM FOR POWER-CONSERVING INTERFERENCE AVOIDANCE IN COMMUNICATION BETWEEN A MOBILE UNIT AND A BASE UNIT IN A WIRELESS TELECOMMUNICATION SYSTEM" by Uwe Sydon, Juergen Kockmann, Paulus Sastrodjojo and Sheng Guan, please amend the application as follows:

IN THE SPECIFICATION:

Please amend pages 1 and 2 of the specification as follows (marked up version of these pages are attached hereto):

RELATED APPLICATIONS

This application is related to the following co-pending Applications all filed on November 19, 1999:

Serial No. 09/443,939 (Attorney Docket: 99P7360), entitled *System and Method for Wireless Communication Incorporating Error Concealment*;

Serial No. 09/443,999 (Attorney Docket: 99P7357), entitled *System and Method for Simultaneously Testing Multiple Cordless Telephones*;

Serial No. 09/444,033 (Attorney Docket: 99P7353), entitled *System and Method for Testing An Assembled Telephone*;

Serial No. 09/444,058 (Attorney Docket No. 99P7367), entitled *System and Method for Wireless Communication Incorporating Range Warning*;

Serial No. 09/443,968 (Attorney Docket No. 99P7362), entitled *Method and System for Wireless Telecommunication Between A Mobile Unit and A Base Unit*;

Serial No. 09/443,931 (Attorney Docket No. 99P7359), entitled *Method and System for Avoiding Periodic Bursts of Interference In Wireless Communication Between A Mobile Unit and A Base Unit*;

Serial No. 09/444,008 (Attorney Docket No. 99P7368), entitled *Method and System for Changing States In A Wireless Telecommunication System*;

Serial No. 09/443,933 (Attorney Docket No. 99P7356), entitled *Method and System for Wireless Communication Incorporating Distinct System Identifier Bytes to Preserve Multi-frame Synchronization for Systems with Limited Control Channel Bandwidth*;

Serial No. 09/443,972 (Attorney Docket No. 99P7355), entitled *System and Method for Wireless Communication Incorporating Synchronization Concept for 2.4 Ghz Direct Sequence Spread Spectrum Cordless Telephone System*;

Serial No. 09/443,166 (Attorney Docket No. 99P7366), entitled *System And Method For Wireless Communication Incorporating Overloading Prevention Techniques for Multi-frame-synchronized Systems*;

Serial No. 09/443,998 (Attorney Docket: 99P7365), entitled *System and Method for Wireless Communication Incorporating Preloaded Response Message*;

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Serial No. 09/443,997 (Attorney Docket: 99P7351), entitled *Method and System for Transmitting and Receiving Caller Id Data in a Wireless Telephone System*;

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Serial No. 09/443,996 (Attorney Docket: 99P7999), entitled *Method and System for Wireless Telecommunications Using a Multiframe Control Message*;

Serial No. 09/443,936 (Attorney Docket: 99P7352), entitled *Method and System for Transmitting Caller Id Information from a Base Station to a Mobile Unit Outside the Context of an Incoming Call*; and

Serial No. 09/443,942 (Attorney Docket: 99P7369), entitled *Method and System for Data Compression*.

IN THE CLAIMS

For the convenience of the Examiner all of the pending claims are reproduced below. Amended claims are so indicated.

Please amend the claims as follows:

Please cancel Claims 1-12 without prejudice or disclaimer.

13. (Amended) A method for conserving power in a wireless communication system, comprising:

providing communication between a first and second component;
transmitting an initial signal from the first component to the second component at a first power level;
receiving the initial signal from the first component at the second component;
determining a line quality for the initial signal at the second component;
determining a communication strength for the initial signal at the second component; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at a second power level, the second power level less than the first power level, when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range [the second power level based on the communication strength for the initial signal].

Please cancel Claims 14 and 15 without prejudice or disclaimer.

16. The method of Claim 13, the first component comprising a mobile unit and the second component comprising a base unit.

17. The method of Claim 13, the first component comprising a base unit and the second component comprising a mobile unit.

Please add the following new claims 18-33:

18. (**New**) The method of Claim 13, determining a line quality for the initial signal comprising determining a plurality of successive line quality indicators and summing consecutive line quality indicators over a pre-determined period of time.

19. (**New**) The method of Claim 13, further comprising:

determining a power level for the initial signal at the second component, the power level comprising one of a maximum power level and at least one non-maximum power level; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at the maximum power level when the line quality for the initial signal is inferior to the pre-determined threshold and the first power level is a non-maximum power level.

20. (**New**) The method of Claim 19, further comprising:

incrementing an attempt counter at the second component when a request is transmitted for the first component to transmit a subsequent signal at the maximum power level; and

determining a power level for the initial signal comprising determining a value of the attempt counter.

21. **(New)** A system for conserving power in a wireless communication system, comprising:

a first component;

a second component for providing wireless communication with the first component and for transmitting an initial signal to the first component at a first power level;

an error detector for the first component, the error detector for determining a line quality for the initial signal; and

the first component operable to determine a power level for the initial signal, the power level comprising one of a maximum power level and at least one non-maximum power level and to transmit a signal to the second component requesting the second component to transmit a subsequent signal at the maximum power level when the line quality for the initial signal is inferior to a pre-determined threshold and the first power level is a non-maximum power level.

22. **(New)** The system of Claim 21, the first component comprising a mobile unit and the second component comprising a base unit.

23. **(New)** The system of Claim 21, the first component comprising a base unit and the second component comprising a mobile unit.

24. **(New)** The system of Claim 21, the error detector operable to determine a line quality for the initial signal by determining a plurality of successive line quality indicators.

25. **(New)** The system of Claim 24, further comprising a slow hop counter for summing consecutive line quality indicators over a pre-determined period of time, the error detector further operable to determine a line quality for the initial signal by determining a value of the slow hop counter.

26. (New) The system of Claim 21, the first component further operable to determine a communication strength for the initial signal and to transmit a signal to the second component requesting the second component to transmit a subsequent signal at a second power level, the second power level less than the first power level, when the line quality for the initial signal is superior to the pre-determined threshold and the communication strength is greater than a specified range.

27. (New) The system of Claim 21, further comprising:

an attempt counter for the first component, the attempt counter for indicating whether the second component is transmitting at the maximum power level; and

the first component operable to determine a power level for the initial signal by determining a value of the attempt counter.

28. (New) A method for conserving power in a wireless communication system, comprising:

providing communication between a first and second component;

receiving an initial signal from the first component at the second component, the initial signal transmitted from the first component at a first power level;

determining a plurality of successive line quality indicators for the initial signal at the second component;

determining a line quality for the initial signal at the second component by summing consecutive line quality indicators over a pre-determined period of time; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at a second power level, the second power level based on the line quality for the initial signal.

29. (New) The method of Claim 28, the first component comprising a mobile unit and the second component comprising a base unit.

30. (New) The method of Claim 28, the first component comprising a base unit and the second component comprising a mobile unit.

31. **(New)** The method of Claim 28, further comprising:

determining a communication strength for the initial signal at the second component; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at the second power level, the second power level less than the first power level, when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range.

32. **(New)** The method of Claim 28, further comprising:

determining a power level for the initial signal at the second component, the power level comprising one of a maximum power level and at least one non-maximum power level; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at the second power level, the second power level comprising the maximum power level, when the line quality for the initial signal is inferior to a pre-determined threshold and the first power level is a non-maximum power level.

33. **(New)** The method of Claim 32, further comprising:

incrementing an attempt counter at the second component when a request is transmitted for the first component to transmit a subsequent signal at the maximum power level; and

determining a power level for the initial signal comprising determining a value of the attempt counter.

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REMARKS

This Application has been carefully reviewed in light of the Office Action mailed August 29, 2000. In the Office Action, the Examiner allowed Claims 1-12 and rejected Claims 13-17. To advance prosecution of this continuation application, Claim 13 is amended, Claims 1-12 and 14-15 are canceled, and new Claims 18-33 are added. Thus, Claims 13 and 16-33 are now pending in this Application. Applicants respectfully request reconsideration and favorable action in this case.

The Specification has been amended to include the identification of co-pending applications.

Section 102 Rejections

The Examiner rejected pending Claims 13-17 under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 5,265,119 issued to Gilhousen, et al. (*Gilhousen*). Of these, Claim 13 is independent. Applicants respectfully traverse these rejections for the reasons discussed below.

Applicants respectfully submit that *Gilhousen* fails to disclose, teach or suggest “determining a line quality for the initial signal at the second component,” “determining a communication strength for the initial signal at the second component,” and “transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at a second power level, the second power level less than the first power level, when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range,” as recited by amended Claim 13.

Gilhousen is directed toward a “power control system for a cellular mobile telephone system.” See Abstract. *Gilhousen* provides for a mobile unit to measure the power of signals received from a cell-site, and vice versa. See Abstract. Based on these measurements, the mobile unit and the cell-site may request power adjustments from each other. Col. 13, lines 60-63 and col. 20, lines 25-30 and 41-47. However, *Gilhousen* fails to disclose any measurement or determination of any factor, separate and distinct from received signal power, on which to base a request for power adjustments.

In contrast, the present invention provides for determining both a line quality and a communication strength for the initial signal at the second component and transmitting from

the second component a request for the first component to transmit a subsequent signal at a second power level less than the first power level when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range.

As described in the present application, the line quality determined by a component relates to the quality of signals as those signals are received at the component. Page 12, lines 10-13, page 12, line 31 - page 13, line 3, and page 13, lines 21-23. The communication strength determined by a component relates to the strength of signals as those signals are received at the component. Page 15, lines 23-28. In addition, as discussed below in connection with dependent Claim 19, the power level determined by a component relates to the power of signals as those signals are transmitted to the component from another component. Page 15, lines 1-6 and 16-22.

As described in the present application, when the line quality for the signal is inferior to the threshold, the receiving component either requests maximum power or requests a channel change if the transmitting component is in range. Present Application, page 16, line 17 - page 17, line 13. Thus, a request for reduced power is not made when the line quality is determined to be inferior. In this way, the present invention prevents a component from requesting reduced power in the transmission of signals from another component, even when the signal may have a high communication strength, if the line quality is inferior. As recited by amended Claim 13, the request for a subsequent signal to be transmitted at a reduced power level is transmitted when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range. Therefore, *Gilhousen* fails to teach all elements of amended Claim 13. Accordingly, Claim 13, as amended, is not anticipated by the cited art. Therefore, Applicants respectfully submit that this rejection should now be withdrawn.

Dependent Claims 16 and 17 that depend from independent Claim 13 are also not anticipated by the cited art because they include the limitations of Claim 13 and add additional elements that further distinguish the art. Therefore, Applicants respectfully submit that these rejections should now be withdrawn.

New Claims

Claims 18-33 have been added to more fully claim the present invention. Applicants respectfully submit that no new matter is added by these claims. Claims 18-20 depend from independent Claim 13, which is allowable over the cited art as discussed above. Thus, Claims 18-20 are allowable over the cited art because they include the limitations of Claim 13 and add additional elements that further distinguish the art. Therefore, Applicants respectfully request allowance of Claims 18-20.

In particular, Claim 19 recites “determining a power level for the initial signal at the second component, the power level comprising one of a maximum power level and at least one non-maximum power level.” As described above in connection with the Section 102 rejections, the power level relates to the power of signals as those signals are transmitted from another component. Thus, a receiving component determines the power level at which a transmitting component is transmitting the signal. This is distinct from the determination of either the communication strength or the line quality of the signal as it is received at the receiving component. As the cited art fails to disclose a determination of the transmitted power level, as opposed to the received power level, Claim 19 is allowable for this reason also.

Furthermore, Claim 19 also recites “transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at the maximum power level when the line quality for the initial signal is inferior to the pre-determined threshold and the first power level is a non-maximum power level.” Thus, a request for maximum power is made without regard to the communication strength of the received signal, in contrast to *Gilhousen's* system which bases requests for power adjustments on measurements of received signal power as previously discussed. Thus, for this reason also, Claim 19 is allowable over the cited art.

Similar to independent Claim 13 and dependent Claim 19, independent Claim 21 recites “an error detector for the first component, the error detector for determining a line quality for the initial signal” and “the first component operable to determine a power level for the initial signal, the power level comprising one of a maximum power level and at least one non-maximum power level and to transmit a signal to the second component requesting the

second component to transmit a subsequent signal at the maximum power level when the line quality for the initial signal is inferior to a pre-determined threshold and the first power level is a non-maximum power level.” Accordingly, for the reasons discussed above in connection with Claims 13 and 19, Claim 21 is allowable over the cited art.

Independent Claim 28 recites “determining a plurality of successive line quality indicators for the initial signal at the second component,” “determining a line quality for the initial signal at the second component by summing consecutive line quality indicators over a pre-determined period of time,” and “transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at a second power level, the second power level based on the line quality for the initial signal.” Applicants respectfully submit that the cited art fails to disclose, teach or suggest these elements. Accordingly, Claim 28 is allowable over the cited art.

Dependent Claims 22-27 that depend from independent Claim 21 and dependent Claims 29-33 that depend from independent Claim 28 are also allowable over the cited art because they include the limitations of their respective base claims and add additional elements that further distinguish the art.

CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending Claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

The Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 19-2179 of Siemens Corp.

Respectfully submitted,

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Date: June 15, 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE**IN THE SPECIFICATION:**

Please amend pages 1 and 2 of the specification as follows (marked up version of these pages are attached hereto):

RELATED APPLICATIONS

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Serial No. 09/443,996 (Attorney Docket: 99P7999), entitled *Method and System for Wireless Telecommunications Using a Multiframe Control Message*;

Serial No. 09/443,936 (Attorney Docket: 99P7352), entitled *Method and System for Transmitting Caller Id Information from a Base Station to a Mobile Unit Outside the Context of an Incoming Call*; and

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13. (Amended) A method for conserving power in a wireless communication system, comprising:

providing communication between a first and second component;

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receiving the initial signal from the first component at the second component;

determining a line quality for the initial signal at the second component;

determining a communication strength for the initial signal at the second component; and

transmitting from the second component to the first component a request for the first component to transmit a subsequent signal at a second power level, **the second power level less than the first power level, when the line quality for the initial signal is superior to a pre-determined threshold and the communication strength is greater than a specified range** [the second power level based on the communication strength for the initial signal].